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A R S
SCIENCE
HALL
OF
FAME

September 13, 2000

Agricultural Research Service
United States Department of Agriculture

Agricultural Research Service SCIENCE HALL OF FAME

The ARS Science Hall of Fame was inaugurated in 1986. We determined that each succeeding year, one or more present or former scientists with the Agricultural Research Service could be selected, subject to the following criteria:

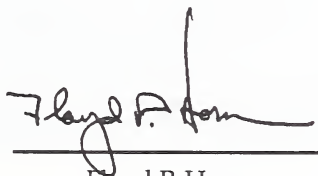
The selectee made a major impact on agricultural research, either by the solution of a significant agricultural problem through research or by providing outstanding leadership that significantly advanced agricultural research.

The selectee is a person whose accomplishments are still recognized by the agricultural research community.

The selectee's character and record of achievement are worthy of emulation by younger agricultural scientists.

The selectee's achievements must be or have been nationally and/or internationally recognized by peers in the scientific community.

Today we honor three outstanding scientists by inducting them into the Science Hall of Fame. A plaque citing the achievements of each will be on permanent display in the ARS National Visitor Center at the Beltsville Agricultural Research Center.

A handwritten signature in dark ink, reading "Floyd P. Horn". The signature is written in a cursive style with a long, sweeping horizontal line extending to the right.

Floyd P. Horn
Administrator



SCIENCE HALL OF FAME

Virginia H. Holsinger

Research Leader (Retired)
Dairy Products Research Unit
Wyndmoor, Pennsylvania

*For research leading to increased use of milk products and
for humanitarian efforts in developing nutritious formulations
for international food donation programs.*



Virginia H. Holsinger is renowned for her work with dairy products, especially whey and whey beverages, but including many other products derived from milk. Her work on formulated foods for emergency use and food donation has enriched the health of needy people worldwide.

Holsinger's work on whey included creating a whey-soy drink mix that serves in place of nonfat dry milk in international food donation programs. Another project developed a low-fat mozzarella now used in school-lunch pizza to meet the national 30-percent calories from fat nutritional goal. Holsinger has also been involved in development of a product consisting of butteroil encapsulated in flour or sugar that does not require refrigeration.

Her most widely known work is development of the enzyme treatment that makes milk digestible by lactose-intolerant individuals. This treatment makes milk available to millions who were unable to drink it without severe discomfort. This advance has opened up a large market for milk and milk products.

In her most recent work with ARS, Holsinger led development of a corn-soy blend that delivers the full nutritional needs of hungry people and is easily prepared without cooking. This product will be used in emergencies such as refugee camps and disaster centers around the world.

USDA has recognized Holsinger with its Distinguished Scientist of the Year, Technology Transfer, Superior Service, and Distinguished Service Awards. Many groups outside government, including the American Chemical Society, the Institute of Food Technologists, the National Research Council, and the International Dairy Foods Association, have also recognized her achievements.



2000

SCIENCE HALL OF FAME

Marvin E. Jensen

National Program Leader (Retired)
Water Management Research
Beltsville, Maryland

For advancements in irrigation scheduling using computer models to estimate soil-water balance and for advancements in evapotranspiration theory.



Marvin E. Jensen developed the first practical models of soil-water balance needed to improve irrigation scheduling using computers. His work increased the efficiency of use of water and energy, resulting in savings for farmers and consumers.

By factoring together weather, soils, and crops, a water-balance equation can show a crop's need for water throughout the growing season. Back in the days of slide rules and hand-cranked adding machines, Jensen and his associates produced one of the first practical evapotranspiration equations for studying water use by crops. As computers became more available, Jensen developed more detailed and more accurate formulations that exploited the capabilities of these electronic tools.

Jensen's work spawned modern scientific irrigation scheduling. Precise scheduling of irrigation applications produces savings in water and energy, which increase production and profits, as well as providing environmental benefits. The flourishing industry of irrigation scheduling, engineering evaluation, and crop consulting developed out of Jensen's pioneering work.

Jensen's international work in Sri Lanka, Egypt, Romania, and elsewhere has advanced irrigation management around the world, and he served as President of the International Commission on Irrigation and Drainage. Since retiring from USDA in 1987, Jensen has continued to serve the U.S. and world agricultural community.

Jensen has received many honors. He delivered the Morrison Memorial Lecture in 1990. He is an honorary member of the American Society of Civil Engineers, has been elected to the National Academy of Engineering, and is a Fellow of the American Society of Agricultural Engineers. He has received awards from ASCE, ASAE, and the Irrigation Association.



2000

SCIENCE HALL OF FAME

Harley W. Moon

Center Director (Retired)
Plum Island Animal Disease Laboratory
Greenport, New York

For contributions to a fundamental understanding of intestinal diseases in livestock and for development of effective control programs for these diseases.



Harley W. Moon has contributed widely to our knowledge of intestinal diseases, particularly those of major economic significance in newborn pigs and calves. He has increased understanding of the pathophysiologic types of enteric diseases, their classification, and their relation to diarrhea in animals and man, greatly advancing veterinary pathology.

Moon discovered that some strains of *E. coli*, which are common in the intestines of humans and animals, can produce diarrhea. His research on the microbiology of *E. coli* revealed how the bacterium causes diarrheal disease in newborn pigs. These findings are fundamental to the study of this disease in other animals and in humans. Moon's research also opened the way for development of methods to control *E. coli* infection. Diagnostic tests and vaccines are used routinely around the world to control colibacillosis in newborn calves, pigs, and humans.

Other research performed by Moon associated cryptosporidia with calf diarrhea and established the pathogenic importance of this group of protozoans.

At ARS, Moon was director of the National Animal Disease Center and later of the Plum Island Animal Disease Center. Now retired from ARS, he is the F. K. Ramsey Distinguished Chair in Veterinary Pathology at Iowa State University and continues to work with ARS and other scientists. Moon has also worked with the World Health Organization and the National Research Council, as well as other boards and committees.

Moon was elected to the National Academy of Sciences in 1991 and has received many other honors, including the Schofield Medal and awards from several other countries. USDA has presented Moon with its Outstanding Research Leadership and Superior Service Awards and the Talcott W. Edminster Award.

ARS Science Fall of Fame

1986

Edward F. Knipling

For pioneering research and leadership in development of the sterile insect technique, which led to the eradication of the screwworm, and of other technologies to suppress and manage insect pests.

1987

Howard L. Bachrach

For pioneering research on the molecular biology of foot-and-mouth disease that led to development of the world's first effective subunit vaccine for any disease of animals or humans through the use of gene splicing.

Myron K. Brakke

For consistent, career-long valuable contributions to the science of virology, particularly plant virology.

Glenn W. Burton

For outstanding achievements in forage and turf science, which have had extraordinary effects on the forage-based cattle industry, the turf industry, and agriculture worldwide.

Wilson A. Reeves

For outstanding research and leadership in the field of textile chemical finishing that have significantly benefitted agriculture and consumers.

Ernest R. Sears

For pioneering work in wheat genetics and for discoveries on chromosomal mechanisms that established standards in animal, plant, and human genetics.

Orville A. Vogel

For development of the first useful semidwarf wheats and of innovative production systems that made the Pacific Northwest a major source of soft white wheat, inspired similar research efforts throughout the world, and sparked the Green Revolution.

Cecil H. Wadleigh

For elucidating the mechanisms through which crops respond to salinity and water stress and for inspired planning and leadership that enabled and motivated those who worked with him to expand and make use of knowledge of soils, water, and air and their interactions with plants.

1988

Francis E. Clark

For outstanding research leading to greater understanding of soil, plant, and microbial interactions and of nutrient cycling in terrestrial ecosystems.

Edgar E. Hartwig

For research in soybean breeding and genetics that has been a major factor in soybeans becoming the second most valuable U.S. crop and particularly for developing cultivars that thrive in the South.

Ralph E. Hodgson

For significant contributions to the knowledge of ruminant nutrition and for visionary leadership, both domestic and international, in the animal industries.

Hamish N. Munro

For career-long contributions to the science of nutrition, particularly on the relationship of dietary protein and iron to the health of the elderly, and for promotion of studies on aging.

Jose Vicente-Chandler

For research leading to new and greatly improved production systems for beef, milk, coffee, plantains, and rice for Puerto Rico and Caribbean countries.

1989

Douglas R. Dewey

For world leadership in genetics and taxonomy of the Triticeae tribe of grasses and for development of the cytogenetic basis for creating new grass hybrids.

Theodor O. Diener

For conceptualizing and discovering viroids, for leading research on viroid detection and control, and for inspiring new approaches in the search for causes of several serious diseases affecting plants, livestock, and humans.

Karl H. Norris

For developing principles and instruments using the electromagnetic wave spectrum to make rapid nondestructive measurements for evaluating quality of agricultural products.

John F. Sullivan

For engineering contributions to the food-processing and preservation industries, including development of instant potato flakes and of batch and continuous explosion puffing.

1990

Theodore C. Byerly

For extraordinary contributions as a scientist, research leader, and administrator to the success of agricultural research programs and advances in U.S. and world agriculture.

Gordon E. Dickerson

For research contributions widely used by breeders to increase production efficiency of cattle, sheep, swine, and poultry.

Robert W. Holley

For isolation and characterization, including the first nucleotide sequence, of transfer ribonucleic acid (tRNA).

Virgil A. Johnson

For outstanding contributions to development of superior bread wheat cultivars and of improved wheat germplasm and for vigorous promotion of national and international cooperation among wheat breeders.

George F. Sprague

For outstanding contributions to effective methods of hybrid corn breeding and germplasm improvement.

1991

John H. Weinberger

For outstanding lifelong contributions in development of fruit varieties and fruit-breeding technology.

Walter H. Wischmeier

For developing the Universal Soil Loss Equation, which has been widely used for three decades worldwide in conservation and management of our natural resources.

1992

Raymond C. Bushland

For pioneering research leading to screwworm eradication by the sterile insect technique and for research leading to control of typhus vectors.

Lyman B. Crittenden

For significant contributions to retroviral genetics, transgenic animal development, and genome mapping in poultry.

Arnel R. Hallauer

For increasing understanding and use of quantitative genetics in plant breeding, which has led to development of many superior corn hybrids worldwide.

1993

John R. Gorham

For scientific leadership and studies that have resulted in solutions of disease control problems and have advanced basic knowledge of viral and genetic diseases in humans and animals.

Sterling B. Hendricks

For significant contributions as a chemist, physicist, mathematician, plant physiologist, geologist, and mineralogist.

Clair E. Terrill

For scientific contributions and worldwide leadership in sheep production research.

1994

Charles N. Bollich

In recognition of superlative accomplishments in rice breeding and genetics and their consequent benefits to American agriculture.

Chester G. McWhorter

For outstanding contributions to American agriculture through basic and applied research that has resulted in improved weed-management technology, increased yields, and reduced cost of production.

Malcolm J. Thompson

For career research contributions in the field of insect and plant steroid biochemistry.

1995

Harry Alfred Borthwick

In recognition of contributions in elucidation of photoperiodic mechanisms controlling flowering in plants.

William M. Doane

For initiating, leading, and conducting research that created new and useful products and led to the establishment of new industries based on agricultural raw materials.

Walter Mertz, M.D.

For contributions and leadership in elucidating the importance to health of several trace elements and promoting research on dietary risk factors for chronic disorders.

1996

Fred W. Blaisdell

For pioneering research and development of improved structures for soil and water conservation.

Herbert J. Dutton

For pioneering research leading to the establishment of soybean oil as the predominant edible vegetable oil in the world.

Charles Jackson Hearn

For developing improved orange, grapefruit, and tangerine varieties used extensively by U.S. citrus producers to replace trees killed by the 1980 freezes and to expand the citrus acreage.

1997

Morton Beroza

For major contributions to the development of environmentally compatible insect-control strategies through discovery of lures, attractants, repellents, and pheromones.

R. James Cook

For extraordinary research on sustainable approaches to improve wheat health and for leadership in the transfer of information and technology resulting in solutions to agricultural problems.

William L. Ogren

For outstanding leadership and fundamental contributions to photosynthetic carbon metabolism leading to the discovery of new opportunities to improve the efficiency and productivity of crop plants.

1998

Thomas J. Henneberry

For conducting basic and applied individual and team research that has had sustained global impact on development and implementation of integrated pest management systems.

James H. Tumlinson III

For research that led to eradication of the boll weevil from the southeastern United States and the discovery of the chemical basis of plant-insect-parasite interaction.

1999

Allene R. Jeanes

For microbiological, chemical, and engineering research that created urgently needed, life-saving industrial polymers made from agricultural commodities.

Charles W. Stuber

For pioneering the use of molecular markers in identifying, mapping, and manipulating quantitative trait genes.

Richard L. Witter

For outstanding research contributions and leadership in the field of avian tumor viruses.



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